25 August 2003
Application No.: 09/648,413
Docket: 1002.02

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

C1

1. (previously amended) An integrated optical monitoring system, comprising:
a package;
an optical bench sealed within the package;
a fiber pigtail for transmitting an optical signal to the package;
a tunable filter, connected to a top of the bench, that filters the optical signal supplied by the fiber pigtail; and
a detector connected to the bench that detects the filtered optical signal from the tunable filter.

C2

2. (original) An optical monitoring system as claimed in claim 1, further comprising an isolator for suppressing back reflections into the fiber pigtail.

3. (original) An optical monitoring system as claimed in claim 1, further comprising an isolator installed on the optical bench for suppressing back reflections into the fiber pigtail.

4. (original) An optical monitoring system as claimed in claim 1, further comprising a reference signal source that generates a reference signal that is filtered by the tunable filter.

5. (original) An optical monitoring system as claimed in claim 1, further comprising a reference signal source, installed on the optical bench, which generates a reference signal that is filtered by the tunable filter.

6. (original) An optical monitoring system as claimed in claim 5, wherein the reference signal source comprises:
a broadband source; and
an etalon that generates a reference signal with stable spectral characteristics from broadband signal from the broadband source.

C3

7. (previously amended) An optical monitoring system as claimed in claim 1, further comprising:

a reference signal source, installed on the optical bench, that generates a reference signal that is filtered by the tunable filter; and

a reference signal sensor that detects the reference signal which has been filtered by the tunable filter.

C4

8. (original) An optical monitoring system as claimed in claim 1, wherein the optical bench is smaller than 0.75 inches by 0.5 inches.

C5

9. (previously amended) An optical monitoring system as claimed in claim 1, further comprising:

a reference signal source, installed on the optical bench, that generates the reference signal;

a collimating lens, installed on the optical bench, for improving the collimation of the reference signal;

a combining filter, installed on the optical bench, that inserts the reference signal into a beam path of optical signal prior to filtering by the tunable filter;

a separation filter, installed on the optical bench, that separates the reference signal from the optical signal, post filtering by the tunable filter; and

a reference signal sensor, installed on the optical bench, that detects the reference signal from the separation filter.

C6

10. (twice previously amended) A method for constructing an integrated optical monitoring system, comprising:

installing an optical bench in a hermetic package;

connecting a fiber pigtail to the package to provide an optical signal;

installing a tunable filter on a top of the bench to filter the optical signal from the fiber pigtail; and

installing a detector on the bench to detect the filtered optical signal from the tunable filter.

11. (original) A method as claimed in claim 10, further comprising installing an isolator on the bench to suppress back reflections into the fiber pigtail.

12. (original) A method as claimed in claim 11, further comprising:
generating a reference signal; and
filtering the reference signal with the tunable filter.

13. (original) A method as claimed in claim 10, further comprising:
installing a reference signal source on the optical bench; and
installing a combining filter on the optical bench to insert a reference signal from the reference source into a beam path of the optical signal.

14. (original) A method as claimed in claim 13, wherein the step of installing the reference signal source comprises:
installing a broadband source; and
installing etalon that converts emissions from the broadband source into a reference signal with stable spectral characteristics.

15. (original) A method as claimed in claim 10, wherein the optical bench is smaller than 0.75 inches by 0.5 inches.

16. (original) A method as claimed in claim 10, further comprising:
installing a reference signal source on the optical bench;
installing a collimating lens on the optical bench for improving collimation of the reference signal;
installing a combining filter on the optical bench that inserts the reference signal into a beam path of the optical signal prior to filtering by the tunable filter; and
installing a separation filter on the optical bench that separates the reference signal from the optical signal post filtering by the tunable filter.

17. (previously added) A method as claimed in claim 10, further comprising installing a lens optically between the fiber pigtail and the tunable filter on the bench to couple the optical signal into the tunable filter.

18. (previously added) An optical monitoring system as claimed in claim 1, further comprising a lens installed optically between the fiber pigtail and the tunable filter on the bench for coupling the optical signal into the tunable filter.

19. (previously added) An optical monitoring system as claimed in claim 1, wherein the fiber pigtail enters the package via a fiber feed-through to connect to the bench and terminate above the bench.

20. (previously added) An optical monitoring system as claimed in claim 1, wherein the package is hermetic.

21. (previously added) An optical monitoring system as claimed in claim 1, further comprising:

a reference signal source, installed on the optical bench, that generates the reference signal;

a reference source lens, installed on the optical bench, for improving the collimation of the reference signal;

a combining filter, installed on the optical bench, that inserts the reference signal into a beam path of optical signal prior to filtering by the tunable filter; and

at least one optical signal lens in the beam path of the optical signal for coupling the reference signal and the optical signal into the tunable filter.

22. (previously added) A method as claimed in claim 10, further comprising:

installing a reference signal source on the optical bench;

installing a reference source lens on the optical bench for improving collimation of the reference signal;

installing a combining filter on the optical bench that inserts the reference signal into a beam path of the optical signal prior to filtering by the tunable filter; and

installing an optical signal lens between the combining filter and the tunable filter to couple the reference signal and the optical signal into the tunable filter.

CG Cont

23. (new) An optical spectral monitoring system comprising:

a broadband superluminescent light emitting diode (SLED) source; and

a tunable filter that filters an optical signal generated by the SLED source.

24. (new) An optical spectral monitoring system as claimed in claim 23, further comprising a package in which the SLED source and the tunable filter are installed.

25. (new) An optical spectral monitoring system as claimed in claim 23, further comprising an optical bench on which the SLED source and the tunable filter are installed.

26. (new) An optical spectral monitoring system as claimed in claim 23, further comprising an isolator between the SLED source and the tunable filter.

27. (new) An optical spectral monitoring system as claimed in claim 23, wherein a finesse of the tunable filter is greater than 3000.

28. (new) An optical spectral monitoring system as claimed in claim 23, wherein the tunable filter is a Fabry-Perot filter.

29. (new) An optical spectral monitoring system as claimed in claim 23, wherein the tunable filter is a MEMS Fabry-Perot filter.

30. (new) An optical spectral monitoring system as claimed in claim 23, wherein the optical signal includes the 1250-1350 nanometer wavelength range.

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31. (new) An optical spectral monitoring system as claimed in claim 23, further comprising an optical bench on which the SLED source and tunable filter are installed, the tunable filter being installed orthogonally in the bench to filter the optical signal, which is propagating parallel to the bench.

CA end

32. (new) An optical spectral monitoring system as claimed in claim 23, further comprising a detector that detects the filtered optical signal from the tunable filter.

33. (new) An integrated optical monitoring system as claimed in claim 1, wherein the tunable filter is a Fabry-Perot filter.

34. (new) An integrated optical monitoring system as claimed in claim 1, wherein the tunable filter is a MEMS Fabry-Perot filter.